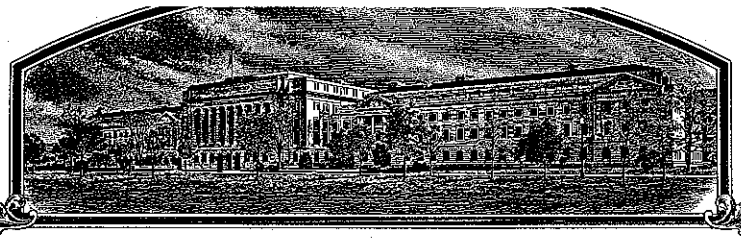
200300074

No.



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

NEXGEN Seed Research, LLC

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) MAY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Tuxedo'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this third day of May, in the year two thousand and seven.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
~~Advanta Seeds B.V.~~ NEXGEN Seed Research, LLC
(BT: 4/16/2007)

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
ATF702

3. VARIETY NAME
Tuxedo

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
~~Dijkwelseestraat 70~~ 33725 Columbus St. SE
~~NL-4421 AJ Kapelle~~ Albany, OR 97322
~~The Netherlands~~ USA
(BT: 4/16/2007)

5. TELEPHONE *(Include area code)*
(541) 967-8923
~~31 113 347 900~~

6. FAX *(Include area code)*
(541) 967-8223
~~31 113 350 110~~

FOR OFFICIAL USE ONLY

PVPO NUMBER
200300074

FILING DATE
1/13/2003

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Incorporated

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
Oregon
~~The Netherlands~~
(BT: 4/16/2007)

9. DATE OF INCORPORATION
7-31-2006
~~12-3-1986~~

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
Kenneth Highnight C/O
Advanta Pacific, LLC
33725 Columbus St SE
Albany, OR
97322
USA

FEES RECEIVED
FILING AND EXAMINATION FEES:
$ 2,705.00
DATE 1/13/2003
CERTIFICATION FEE:
$ 768.00
DATE 3/5/2007

11. TELEPHONE *(Include area code)*
(541) 967-8923

12. FAX *(Include area code)*
(541) 967-8223

13. E-MAIL

14. CROP KIND *(Common Name)*
Tall Fescue

16. FAMILY NAME *(Botanical)*
Poaceae

15. GENUS AND SPECIES NAME OF CROP
Festuca arundinacea

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☑ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? *(OPTIONAL)*
☐ YES ☑ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED
(Follow instructions on reverse)

a. ☑ Exhibit A. Origin and Breeding History of the Variety
b. ☑ Exhibit B. Statement of Distinctness
c. ☑ Exhibit C. Objective Description of Variety
d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☑ Filing and Examination Fee ($3,652), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☑ YES *(If "yes", answer items 21 and 22 below)* ☐ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☑ YES ☐ NO
IF YES, WHICH CLASSES? ☑ FOUNDATION ☑ REGISTERED ☑ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☑ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
FOUNDATION REGISTERED CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☐ YES ☑ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
Kenneth Highnight			
NAME *(Please print or type)*		NAME *(Please print or type)*	
Kenneth Highnight			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Director of Research	1/03/2003 (BT: 11/6/2006 per applicant's authorization)	Director of Research	

(See reverse for instructions and information collection burden statement)

ST-470 (04-03) designed by the Plant Variety Protection Office using Word 2002.

Exhibit A:

Origin and Breeding History

Tuxedo (ATF702) Tall Fescue

1. The tall fescue (*Festuca arundinacea*) cultivar 'Tuxedo' traces its parentage to four cultivars. The parentage consists of Finesse (1/2), SR 8250 (1/8), Adam's Valley (1/4), and Wyatt (1/8). A long term plant selection field was established in the fall of 1997. The field design consisted of unbordered row plots with two rows per cultivar. This type of design was used to help eliminate interplot competition. The nursery was replicated four times with 20 plants per replication. The nursery was evaluated for two years for genetic color, fine leaf texture, and freedom from disease. Fourteen clones were selected which exhibited the best visual characteristics of dark genetic color, fine leaf texture, dense crown, freedom from stem rust (*Puccinia graminis*), winter leaf spot diseases, and lack of panicle formation in regrowth. In the spring of 1999 the fourteen plants were moved together, placed in isolation, and allowed to interpollinate. Each plant was examined for the presence of the fungal endophyte (*Neotyphodium coenophialum*). Only the eight infected plants were harvested in bulk and designated ATF702.

In the fall of 1999 a 2,500 plant breeder seed block was established in isolation in Albany, Oregon. 'Tuxedo' ATF702 (BT: 8/8/2006) was also placed in turf trials to evaluate turf performance. The breeder seed block was harvested in bulk in 2000 and designated ATF702(S0). A morphological nursery was established in the fall of 2000 for Plant Variety Protection (PVP) measurements.

2. Breeder Seed Maintenance:

A breeder seed multiplication was planted in isolation in 1999 in Albany, Oregon. Seed was harvested in bulk in 2000 and is maintained in cold storage. Seed propagation is limited to three generations, one each of foundation, registered, and certified.

3. Stability and Uniformity:

Tuxedo has been a stable uniform cultivar over 2 generations. No off-type or variant plants have been observed during the multiplication or reproduction. During the breeder seed multiplication 0.35 % of the plants were removed to improve the uniformity of the population. These types were not observed during the subsequent generations. Turf plots of Tuxedo have been uniform and stable. (er: 8/8/2006)

Exhibit A (addendum): Statement of Stability and Uniformity for tall fescue Tuxedo

Tuxedo has been a stable uniform cultivar over two generations. No off-type or variant plants have been observed during the multiplication or reproduction. During the breeder seed multiplication 0.35% of the plants were removed to improve the uniformity of the population. The plants that were removed showed less vigor and had poor plant health. It is not known if the lack of vigor was due to environmental factors, genetic factors, or an environment by genetic interaction. These types were not observed during the subsequent generations. Turf plots of Tuxedo have been uniform and stable.

Exhibit B:

Novelty Statement of Tuxedo (ATF702) Tall Fescue

The following summary outlines the distinctive characteristics of Tuxedo. The novelty of Tuxedo is based on the unique combination of these characteristics. Tuxedo is most similar to Rebel II , but may be differentiated by using the following criteria:

1) Tuxedo has a heading date and anthesis date that is significantly later than Rebel II (tables 1A, 1B).

2) Tuxedo has a darker genetic color compared to Rebel II (tables 1A, 1B).

3) The mature plant height of Tuxedo is reduced compared to Rebel II (tables 1A, 1B).

4) Tuxedo has a shorter panicle length than Rebel II (tables 1A, 1B).

5) The flag leaf characteristics of length, width, height, sheath length, and internode length are all shorter for Tuxedo compared to Rebel II (tables 1A, 1B).

6) The morphological characteristics of leaf blade length, width, height, and sheath length of Tuxedo are reduced compared to Rebel II (tables 1A, 1B).

7) Tuxedo has a shorter awn length than Rebel II (tables 2A, 2B).

8) The length of the palea and glume of Tuxedo are reduced compared to Rebel II (tables 2A, 2B).

9) The length of the longest whorl on the panicle is shorter for Tuxedo than Rebel II (tables 2A,

2B, illus. 1).

10) The distance between the lower most whorls of the panicle is reduced for Tuxedo compared to Rebel II (tables 2A, 2B, illus. 1).

11) Tuxedo has fewer spikelets per panicle than Rebel II (tables 2A, 2B).

12) The panicle length from the lower most whorl to the tip of the panicle of Tuxedo is shorter compared to Rebel II (tables 2A, 2B, illus. 1).

13) Tuxedo exhibit more plants with a single branch of the lower most whorl compared to Rebel II (tables 3A, 3B, illus. 1). (BT: 1/12/2007)

14) Tuxedo has a lower seed weight per 1,000 seeds compared to Rebel II (tables 3A, 3B).

15) The roughness of the leaf blade margin hairs are smoother for Tuxedo compared to Rebel II (tables 4A, 4B).

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY PROGRAM
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT C
(TALL & MEADOW FESCUES)

OBJECTIVE DESCRIPTION OF VARIETY
TALL & MEADOW FESCUES
(*Festuca* spp.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
~~Advanta Seeds Pacific Int.~~ NEXGEN Seed Research, LLC ~~c/o Debra Rush~~ ~~(BT: 4/16/2003)~~	ATF702	Tuxedo

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

~~33725 Columbus St. S.E.~~ ~~Albany, OR~~ ~~97322~~ ~~(BT: 4/16/2003)~~
~~NL-4121 AS Vianen~~ ~~The Netherlands~~
33725 Columbus St. SE
Albany, OR 97322
USA

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PVPO NUMBER
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Place the appropriate number that describes the varietal characteristics of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characteristics marked with an asterisk * are characteristics which should be recorded.

* 1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)

_1__ 1 = *F. arundinacea* (Tall)

Turf Types

1 = Kentucky 31 2 = Rebel 3 = Olympic 4 = Bonanza 5 = Arid 6 = Rebel II

7 = Shortstop 8 = Silverado 9 = Rebel Jr. 10 = Mini Mustang 11 = Crewcut 12 = Bonsai

Forage Types

20 = Kentucky 31 21 = Martin 22 = Forager 23 = Mozark

24 = Kenhy 25 = AU Triumph 26 = Fawn 27 = Cajun

_____ 2 = *F. pratensis* (Meadow)

30 = Admira 31 = Beaumont 32 = Comtessa 33 = Ensign 34 = Trader

* 2. CYTOLOGY:

___42_____ Chromosome Number

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

_____Transition Zone __2__West __2__ Northeast _____ Other (Specify):_____

* 4. MATURITY: (Date First Headed, 10% of Panicle Emergence)

_7___ Maturity Class 1 = Very early ( ) 2 = AU Triumph 3 = Early (Fawn) 4 = K31, Kenhy 5 = Medium (Rebel)

4. MATURITY: (continued)

200300074

6 = Bonanza 7 = Late (Silverado) 8 = ( ) 9 = Very late

Date Headed _42.33, days after April 1,_____ Location _Albany, Oregon_____

_____ Days earlier than _____
Maturity same as _____
11.66 Days later than __1__
} Comparison Variety

---

* 5. MATURE PLANT HEIGHT CM: (Average of 100 culms from crown to top of panicle, if panicle is nodding, straighten)

_84.43__ cm Height

_42.30 cm Shorter than _1_
Height same as ___
__ __.__ cm Taller than ___
} Comparison Variety

* INTERNODE LENGTH CM: (First internode subtending the flag leaf)

_24.87_ cm Internode Length

__7. 16_ cm Shorter than _1_
Length same as ___
__ __.__ cm Longer than ___
} Comparison Variety

* HEIGHT AT EAR EMERGENCE CM: (Flag leaf height from crown to flag leaf node)

_37._17_ cm Height

26._66 cm Shorter than _1_
Height same as ___
__ __.__ cm Taller than ___
} Comparison Variety

---

* 6. GROWTH HABIT: (Mature Plants)

_9_ 1 = Prostrate ( ) 3 = Semiprostrate (1) 5 = Horizontal ( )

7 = Semierect (Rebel) 9 = Erect (Mini Mustang)

---

* 7. RHIZOMES (Psuedo):

__ __.__ mm Length _X_1 = Absent ( ) 2 = Rare (Rebel) 3 = Common ( )

---

* 8. LEAF BLADE: (Tiller leaves/ turf color)

*_7_ Color: 1 = Light green ( ) 3 = Medium light green (1) 5 = Green ( )

7 = Medium dark green ( ) 9 = Very dark green ( )

_3.17__ Specify rating of comparison variety

*_1_ Anthocyanin: 1 = Absent (1) 9 = Present ( )

*___ Basal Hairs: 1 = Absent ( ) 9 = Present ( )

*_5_ Margins: 1 = Smooth ( ) 5 = Semi-rough ( ) 9 = Rough ( )

---

8. LEAF BLADE: (continued)

*_7_Width Class: 1 = Very coarse ( ) 3 = Coarse (1) 5 = Medium ( )
7 = Fine ( ) 9 = Very Fine ( )

* TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

_26_._77_ cm Tiller Leaf Length

_16.36_ cm Shorter than _1_
Length same as ___
__ __.__ cm Taller than ___
} Comparison Variety

* TILLER LEAF WIDTH MM:

_8.47_ mm Tiller Leaf Width

_1.66_ mm Narrower than_1
Width same as ___
__.__ mm Longer than ___
} Comparison Variety

FLAG LEAF LENGTH CM:

_39_.70_ cm Flag Leaf Length

_17.40_ cm Shorter than _1_
Length same as ___
__.__ cm Longer than ___
} Comparison Variety

FLAG LEAF WIDTH MM:

_5.87_ mm Flag Leaf Width

_1.60 mm Narrower than _1_
Width same as ___
__.__ mm Wider than ___
} Comparison Variety

* 9. LEAF SHEATH: (Basal Portion)

*_1_ Anthocyanin (seedling): 1 = Absent (K31) 9 = Present ( )

*_9_ Auricle Hairiness: 1 = Absent ( ) 9 = Present (1)

* 10. PANICLE: (At seed maturity except where noted.)

*_1_ Shape: 1 = Narrow-tapering ( ) 5 = Ovate (1) 7 = Oblong ( ) 9 = Other (specify)

*_7_ Type: 1 = Compact (appressed) 5 = Intermediate ( ) 7 = Open ( ) 9 = Other (specify)

*_9_ Orientation: 1 = Nodding ( ) 9 = Erect ( )

*___ Branch Pubescence: 1 = Glabrous ( ) 9 = Pubescent ( )

*_1_ Anther Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6= Other (Specify)

*_1_ Glume Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6= Other (Specify)

*_66.26__ cm Panicle Length (from base to tip, if nodding, straighten; after anthesis)

_25.73_ cm Shorter than _1_
Length same as ___
__.__ cm Longer than ___
} Comparison Variety

* 11. SEED: (With Lemma & Pelea)

200300074

*__2378__ mg per 1000 seeds

__970__ mg Less than _1_
Weight same as ___
___ mg More than ___
} Comparison Variety

PALEA: (Keels or Margins) _5_ Hairs: 1 = Absent ( ) 5 = Short (Missouri 96) 9 = Long ( )

LEMMA: _9_ Hairs: 1 = Absent (Kenhy) 5 = Several ( ) 9 = Many (Missouri 96)

_6.61 mm Lemma Length (Mature)

_0.62 mm Shorter than _1_
Length same as ___
__.__ mm Longer than ___
} Comparison Variety

_1.30_ mm Lemma Width

__.__ mm Narrower than ___
Width same as _1_
__.__ mm Wider than ___
} Comparison Variety

*AWNS: _9_ AWNS: 1 = Absent ( ) 9 = Present (Falcon) _100_% Plants with awns

_0.97_ mm Awn length (Of those present.)

__.__ mm Shorter than ___
Length same as _1_
__.__ mm Longer than ___
} Comparison Variety

12. DISEASE, INSECT, AND NEMATODE REACTION: (0= Not Tested 1= Least Resistant 9= Most Resistant)

___ Melting-out *Drechslera poae*
___ Leaf Spot *D. siccans*
___ Net Blotch *D. dictyoides*
___ Brown Patch *Rhizoctonia solani*
___ C. Leaf Spot *Cercospora fectucae*
___ Pink Snow Mold *Gerlachia nivalis*
___ Silver Top *F. tricinctum, F. roseum*
___ Blind Seed *Gloeotinia temulenta*
___ Dollar Spot *Lanzia, Mollerdiscus* spp.
___ Stem Rust *Puccinia graminis*
___ T. Blight *Typhula incarnata*
___ Pythium Blight *Pythium* spp.
___ Powdery Mildew *Erysiphe graminis*
___ Crown Rust *Puccinia coronata*
___ Other Disease _____
___ Other Insect _____
___ Other Nematode _____

13. ENVIRONMENTAL STRESS

___ Drought Stress 1 = Susceptible ( ) 5 = Tolerant ( ) 9 = Resistant ( )
___ Shade Stress 1 = Susceptible ( ) 5 = Tolerant ( ) 9 = Resistant ( )

13. ENVIRONMENTAL STRESS: (continued)

200300074

___ Winter Stress 1 = Susceptible ( ) 5 = Tolerant ( ) 9 = Resistant ( )

14. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics, indicate the degree of resemblance with the following scale:

1 = Application variety is less than comparison variety 2 = Same as 3 = More than, better, greater, darker, etc.

Character	Varieties	Rating	Character	Varieties	Rating
Leaf Width	KY-31	1	Leaf Color	KY-31	3
Panicle Color	KY-31	1	Panicle Shape	KY-31	1
Seed Size	KY-31	1	Cold Injury		
Winter Color			Heat		
Disease					

* 15. EXPERIMENTAL: Give a brief summary of the experimental design utilized to collect the data used on this form. Cultural conditions, number of plants measured and plant spacing must be specified.

A morphological nursery designated 00PVPFA was established in September 2000, in Albany, Oregon. Experimental design consisted of 18 entries; 3 replications per entry; 20 plants per replication; for a total of 60 plants per entry. KY-31, Rebel II, Regiment and Tulsa were used as a standards. Plants were established on 2.5 foot centers with a skip row between replications and between entries.

The nursery received 30 pounds of nitrogen per acre rate following establishment and 50 pounds of nitrogen per acre per year in 2001 and 2002. The fertilizer source was 15 - 15 - 15 and was applied as a split application with ½ applied in the spring and ½ in the autumn. The nursery was sprayed twice each spring, 3 weeks between applications, with Tilt (2oz/acre rate), to prevent stem rust. One pound of Karmex per acre rate was applied during the late summer to prevent emergence of volunteer seedlings.

Data was analyzed using analysis of variance for a randomized complete block design. Means were calculated for each replication and then analyzed.

Exhibit D:

Additional Description

Tuxedo (ATF702) Tall Fescue

Tuxedo is an improved turf-type tall fescue. It has a shorter growth habit (tables 1A, 1B) than previously released tall fescue cultivars, such as KY-31, Rebel II, Tulsa and Regiment. Tuxedo has a late maturity with a heading date and anthesis date later than KY-31, Rebel II and Regiment (tables 1A, 1B). Tuxedo exhibits a darker genetic color compared to the cultivars KY-31, Rebel II, Tulsa and Regiment (tables 1A, 1B). The length of the panicle from the first node subtending the flag leaf to the apex for Tuxedo is shorter than KY-31, Rebel II, Tulsa and Regiment (tables 1A, 1B). The length of the flag leaf is shorter for Tuxedo compared to KY-31, Rebel II, Tulsa and Regiment (tables 1A, 1B). Tuxedo has a narrower flag leaf width compared to KY-31, Rebel II and Regiment (tables 1A, 1B). The flag leaf height of Tuxedo is reduced compared to KY-31, Rebel II, Tulsa and Regiment (tables 1A, 1B). Tuxedo has a shortened sheath length of the flag leaf compared to KY-31, Rebel II and Tulsa (tables 1A, 1B). The distance between the two nodes subtending the flag leaf are reduced for Tuxedo compared to KY-31 and Rebel II (tables 1A, 1B). The leaf blade characteristics length, height and sheath length are shorter for Tuxedo than KY-31, Rebel II and Tulsa (tables 1A, 1B). The leaf blade characteristics of length and sheath length are shorter for Tuxedo compared to Regiment (tables 1A, 1B). Tuxedo has a reduced palea and glume length compared to KY-31 and Rebel II (tables 2A, 2B). The whorl characteristic length of longest branch is shorter for Tuxedo compared to KY-31, Rebel II, Tulsa and Regiment (tables 2A, 2B, illus. 1). The distance between the lower most whorls is shorter for Tuxedo than KY-31, Rebel II and Regiment (tables 2A, 2B, illus. 1). Tuxedo has fewer spikelets on the panicle than KY-31, Rebel II, Tulsa and Regiment (tables 2A, 2B). The length of the panicle from the lower most whorl to apex is shorter for Tuxedo than KY-31, Rebel II and Regiment (tables 2A, 2B, illus. 1).

Visual characteristics can also differentiate Tuxedo from previously released cultivars. Tuxedo exhibits more plants with a single branch of the lower most whorl compared to KY-31 and Rebel II (tables 3A, 3B, illus, 1). Tuxedo produces more open panicles in the first year compared to KY-31, Rebel II and Regiment (tables 3A, 3B). Tuxedo produces a lower frequency of plants with smooth leaf blade margins compared to KY-31, Rebel II, Tulsa and Regiment (tables 4A, 4B). The presence of dark pigmentation in the nodes is less frequent in Tuxedo than KY-31, Rebel II, Tulsa and Regiment (tables 4A, 4B).

Panicle Type Inflorescence

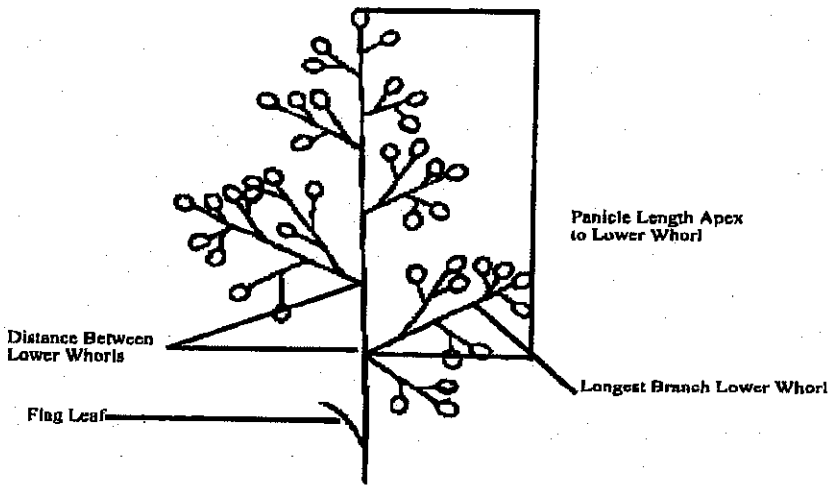

Illustration 1.

Table 1A

2001 Morphological Data

Cultivar	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Genetic Color	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (mm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (mm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
'Turago' <ATF702> (BT:8/8/2006)	42.33	64.00	5.47	83.43	16.73	66.20	32.20	6.35	37.17	21.10	14.03	26.77	8.47	13.60	10.93
ATF705	39.00	61.67	4.97	96.73	17.50	77.97	39.23	6.62	42.37	23.10	15.93	29.50	8.70	14.60	12.00
ATF706	37.67	62.33	5.05	102.03	19.07	79.87	43.10	7.45	46.80	25.23	16.87	37.07	9.33	19.00	14.30
KY-31	30.67	59.67	3.17	125.73	18.40	91.93	50.53	8.58	63.83	30.80	23.20	43.13	10.13	27.37	17.47
Rebel II	34.33	61.00	3.68	113.23	22.13	85.87	46.57	7.92	56.20	28.03	20.27	38.37	9.65	22.33	16.90
Tulsa	39.33	63.33	4.35	100.80	18.67	77.17	40.97	7.00	45.97	23.70	17.60	33.87	8.65	18.60	14.17
Regiment	35.67	62.00	4.25	99.37	19.00	78.67	41.97	7.63	42.87	22.50	15.40	34.27	9.15	15.77	12.97
(BT:8/8/2006) LSD (.05)	1.95	1.37	0.36	6.90	1.68	4.89	2.92	0.94	4.50	2.00	1.77	2.89	0.79	2.38	1.55
C.V.	3.62	1.58	5.27	5.58	6.96	5.00	5.77	10.18	8.03	6.58	8.48	6.89	6.67	11.28	9.17

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.
■ Significant difference over two years one location.
■ Significant difference over one year one location.

Table 1B

2002 Morphological Data

Cultivar	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Genetic Color	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (mm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (mm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
(BT:8/8/2006) 'Tuxedo' <ATF702>	31.67	65.33	5.82	103.60	24.43	66.77	39.70	5.87	61.40	25.17	24.87	37.23	7.13	29.50	15.67
ATF705	27.33	63.00	5.40	113.43	25.67	76.77	45.33	6.07	64.87	27.63	26.53	41.20	7.30	29.47	16.33
ATF706	24.67	63.33	5.42	122.83	24.00	79.17	46.13	6.37	70.00	28.07	27.13	43.30	8.10	35.77	17.53
KY-31	12.00	58.00	3.38	150.07	24.60	93.03	57.10	7.47	92.70	35.67	32.03	54.03	9.85	49.90	22.83
Rebel II	20.67	62.00	4.32	134.97	24.90	83.40	51.30	6.80	81.80	32.27	31.23	49.03	8.50	42.70	19.90
Tulsa	28.67	64.00	5.13	113.97	24.73	73.83	43.73	6.03	66.13	26.70	26.03	41.27	7.60	33.53	16.77
Regiment	25.33	62.67	4.70	120.43	24.93	79.40	47.83	6.67	69.57	27.90	27.37	45.47	7.57	32.80	17.57
(BT:8/8/2006) LSD(.05)	3.21	1.42	0.24	5.03	1.16	4.66	2.54	0.61	3.67	1.14	1.45	2.44	0.65	2.79	0.88
C.V.	4.13	1.62	3.33	3.24	3.40	4.60	4.25	7.02	4.09	3.12	4.10	4.31	6.07	6.38	3.87

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Table 2A

2001 Laboratory Morphological Data

Cultivar	Lemma Length (mm)	Lemma Width (mm)	Lemma Awn Length (mm)	Palea Length (mm)	Palea Width (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Whorl (mm)	Distance Between Lower Most Whorls (mm)	Number of Spikelets on the Longest Whorl	Spikelets per Panicle	Length of Spike From Lower Most Whorl to Tip (mm)
Tuxedo (ATF702)	5.45	1.46	1.97	6.39	1.35	4.69	7.00	12.17	80.20	49.53	15.42	80.67	19.47
ATF705	5.47	1.47	1.97	6.48	1.41	4.91	7.17	12.50	109.40	59.17	18.42	99.00	22.63
ATF706	5.69	1.51	1.91	6.68	1.39	4.97	6.70	12.70	124.07	63.67	15.98	101.67	25.93
KY-31	6.16	1.56	2.15	7.28	1.49	5.77	6.77	13.80	115.03	61.87	15.10	110.00	27.20
Rebel II	5.75	1.49	2.24	6.99	1.40	5.11	5.80	12.30	100.60	58.53	15.00	101.00	24.33
Tulsa	5.62	1.44	2.11	6.52	1.34	5.05	6.77	12.30	102.60	56.53	16.82	100.67	23.40
Regiment	5.96	1.53	2.29	6.96	1.44	5.16	6.47	13.13	114.27	60.73	16.07	92.33	24.50
LSD (.05)	0.27	0.08	0.19	0.21	0.08	0.25	0.75	0.89	14.06	5.72	2.69	9.92	2.09
C.V.	3.53	3.66	6.55	2.26	4.00	3.62	8.13	5.13	10.51	7.76	11.99	7.65	7.04

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Table 2B

2002 Laboratory Morphological Data

Cultivar	Lemma Length (mm)	Lemma Width (mm)	Lemma Awn Length (mm)	Palea Length (mm)	Palea Width (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Whorl (mm)	Distance Between Lower Most Whorls (mm)	Number of Spikelets on the Longest Whorl	Spikelets per Panicle	Length of Spike From Lower Most Whorl to Tip (mm)
(BT:8/8/06) 'Tuxedo' <ATF702>	6.61	1.30	0.97	6.41	1.15	4.74	5.35	11.03	72.40	49.93	12.68	76.00	21.67
ATF705	6.23	1.30	0.86	6.09	1.11	4.66	5.15	10.63	87.37	55.57	15.90	92.00	23.40
ATF706	6.63	1.27	0.92	6.33	1.12	4.88	4.85	10.47	101.17	58.90	14.92	102.33	25.83
KY-31	7.23	1.37	0.89	6.98	1.23	5.23	4.88	11.43	98.40	64.57	15.80	114.67	30.13
Rebel II	6.92	1.43	1.34	6.68	1.26	5.12	4.93	11.57	100.43	61.90	16.08	102.67	27.00
Tulsa	6.61	1.33	0.80	6.23	1.11	4.75	4.98	10.40	86.37	52.33	16.08	96.00	23.33
Regiment	6.70	1.37	1.04	6.53	1.17	4.80	4.77	10.97	92.33	56.73	14.02	87.33	24.60
(BT:8/8/06) LSD (.05)	0.31	0.09	0.21	0.20	0.06	0.31	0.55	0.64	11.42	5.58	2.81	10.71	2.14
C.V.	3.42	5.07	15.21	2.28	3.87	4.66	8.02	4.30	9.95	7.65	13.49	8.42	6.75

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

20030074

Table 3A

2001 Additional Morphological Measurements of the Panicle

Cultivar	Anther Color % Purple	Panicle Color % Purple	Lemma Hairs % Present	Palea Hairs % Present	Lemma Awn % Present	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape % Ovate	Panicle Type % Open	Branch Lower Whorl =1	Branch Lower Whorl =2	Branch Lower Whorl =3	Branch Lower Whorl =4	Seed Weight mg/1,000 Seeds
(OT 12/18/2006) 'Tuxedo' <ATF702>	0	13	100	100	100	0	0	55	45	36	36	62	2	2350
ATF705	0	23	98	100	100	3	0	88	12	25	25	73	2	2655
ATF706	0	22	100	100	100	2	3	63	37	8	8	84	8	2774
KY-31	0	7	97	100	100	0	12	82	18	10	10	82	8	3345
Rebel II	0	15	98	98	100	0	10	83	17	13	13	87	0	2543
Tulsa	0	18	97	100	100	3	0	70	30	25	25	73	2	2395
Regiment	2	10	97	100	100	2	3	85	15	27	27	72	2	2195

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

#20030074

Table 3B

2002 Additional Morphological Measurements of the Panicle

Cultivar	Anther Color % Purple	Panicle Color % Purple	Lemma Hairs % Present	Palea Hairs % Present	Lemma Awn % Present	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape % Ovate	Panicle Type % Open	Branch Lower Whorl =1	Branch Lower Whorl =2	Branch Lower Whorl =3	Branch Lower Whorl =4	Seed Weight mg/1,000 Seeds
'Tuxedo' <ATF702> (originally)	2	35	93	100	100	8	0	23	77	42	57	2	0	2378
ATF705	3	32	98	100	100	13	0	17	83	30	65	3	2	2704
ATF706	0	38	92	100	100	17	0	37	63	13	82	5	0	2812
KY-31	5	13	97	100	100	3	0	2	98	23	73	3	0	3348
Rebel II	5	30	98	100	100	10	0	23	77	28	72	0	0	2562
Tulsa	2	22	98	100	100	5	0	25	75	43	57	0	0	2369
Regiment	2	23	93	100	100	12	0	23	77	42	57	2	0	2259

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

#20030074

Table 4A

2001 Additional Morphological Measurements of the Leaf Blade

Cultivar	Growth Habit at Anthesis % Prostrate	Growth Habit at Anthesis % Semi-Prostrate	Growth Habit at Anthesis % Erect	Anthocyanin Present in the Leaf Blade % Purple	Leaf Blade Margin Roughness to the Touch % Smooth	Leaf Blade Margin Roughness to the Touch % Semi-Rough	Leaf Blade Margin Roughness to the Touch % Rough	Leaf Blade Margin Hairs % Present	Leaf Sheath Auricle Hairs % Present	Rhizomes % Present	Node Color % Distinct
'Tuxedo' ATF702 ■	7	43	50	0	50	20	30	95	90	0	17
ATF705	15	70	15	0	73	15	12	90	82	0	25
ATF706	10	75	15	0	57	23	20	92	77	0	15
KY-31	40	50	10	0	70	15	15	80	92	0	48
Rebel II	10	77	13	0	83	12	5	87	85	0	13
Tulsa	10	78	12	0	68	18	13	85	87	0	15
Regiment	7	80	13	0	83	12	5	78	83	0	12

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

20030074

Table 4B

2002 Additional Morphological Measurements of the Leaf Blade

Cultivar	Growth Habit at Anthesis % Prostrate	Growth Habit at Anthesis % Semi-Prostrate	Growth Habit at Anthesis % Erect	Anthocyanin Present in the Leaf Blade % Purple	Leaf Blade Margin Roughness to the Touch % Smooth	Leaf Blade Margin Roughness to the Touch % Semi-Rough	Leaf Blade Margin Roughness to the Touch % Rough	Leaf Blade Margin Hairs % Present	Leaf Sheath Auricle Hairs % Present	Rhizomes % Present	Node Color % Distinct
'Tuxedo' <ATF702> [illegible]	7	43	50	0	48	30	22	85	90	0	15
ATF705	15	70	15	0	73	15	12	85	92	0	30
ATF706	10	75	15	0	43	27	30	85	90	0	22
KY-31	40	50	10	0	75	13	12	80	77	0	23
Rebel II	10	77	13	0	77	13	10	87	92	0	40
Tulsa	10	78	12	0	56	27	17	85	88	0	25
Regiment	7	80	13	0	58	22	20	87	95	0	23

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
NEXGEN Seed Research, LLC	ATF702	Tuxedo
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(Include area code)*	**6. FAX** *(Include area code)*
33725 Columbus St. SE Albany, OR 97322 USA	(541) 967-8923	(541) 967-8223
	7. PVPO NUMBER 200300074	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☑ **YES** ☐ **NO**

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☑ **YES** ☐ **NO**

10. Is the applicant the original owner? ☑ **YES** ☐ **NO** **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☑ **YES** ☐ **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☑ **YES** ☐ **NO** **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.